PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference N.88232 GCW	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/GB 03/01213	International filing date *(day/month/year)* 19.03.2003	Priority date *(day/month/year)* 19.03.2002
International Patent Classification (IPC) or both national classification and IPC A61K39/39		
Applicant POWDERJECT RESEARCH LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the opinion
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
10.10.2003	01.07.2004
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Lanzrein, M Telephone No. +49 89 2399-7358

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB 03/01213

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

Description, Pages

1-92 as originally filed

Claims, Numbers

1-27 as originally filed

Drawings, Sheets

1/28-28/28 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description, pages:

   ☐ the claims, Nos.:

   ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-27
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-27
Industrial applicability (IA)	Yes:	Claims	1-27
	No:	Claims	

2. Citations and explanations

   see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. This application concerns the administration of DNA vaccines comprising HIV gag and/or nef and/or RT in conjunction with an adjuvant comprising imidazo derivates (e.g. imiquimod). The adjuvant is administered 12-36 hours after the DNA vaccine. It is shown that the delayed administration enhances the cellular responses.

2. Reference is made to the following document/s/:

   D1: WO 93/20847 A (MINNESOTA MINING & MFG) 28 October 1993 (1993-10-28)
   D2: BILLAUT-MULOT Opponent ET AL: "Modulation of cellular and humoral immune responses to a multiepitopic HIV-1 DNA vaccine by interleukin-18 DNA immunization/viral protein boost" VACCINE, BUTTERWORTH SCIENTIFIC. GUILDFORD, GB, vol. 19, no. 20-22, 6 April 2001 (2001-04-06), pages 2803-2811, ISSN: 0264-410X
   D3: WO 01/54719 A (SMITHKLINE BEECHAM BIOLOG ;VOSS GERALD (BE)) 2 August 2001 (2001-08-02)

3. Claims 1-27 appear to be novel over the cited prior art.

4. Claims 1-27 lack inventive step within the meaning of Art. 33 (3) PCT.

   The document D1 is regarded as being the closest prior art to the subject-matter of claims 1-27. It discloses the use of imiquimod as vaccine adjuvant. Administration is proposed simultaneously with the immunogen or subsequently with a delay of 48h. The administration was repeated for 5 subsequent days (p. 15, lines 22-26; p. 28, lines 1-21).
   Thus, imiquimod was known as an effective adjuvant also when administered after the immunogen.
   The difference of the subject-matter of the present claims to D1 is the use of HIV

DNA vaccines.
However, HIV DNA vaccines comprising the genes gag, nef and RT were well known at the time of the priority date, as exemplified in D2 or D3.
It appears that the skilled person would have, without exercise of inventive skill, applied the known adjuvant imiquimod and its various modes of administration for other vaccines as the ones described in D1. Thus, it would have been obvious to use the adjuvant in the HIV DNA vaccines of D2.

5. Certain published documents (Rule 70.10)

Application No Patent No	Publication date *(day/month/year)*	Filing date *(day/month/year)*	Priority date *(valid claim)* *(day/month/year)*
WO 02/24225	28.03.2002	20.09.2001	20.09.2000
WO 03/025003	27.03.2003	18.09.2002	20.09.2001

WO 02/24225 discloses HIV gag/nef DNA vaccine used in conjunction with imiquimod as adjuvant. The adjuvant was administered simultaneously with the vaccine.

WO 03/025003 discloses the same HIV DNA vaccines, the administration is executed in conjunction with imiquimod as adjuvant.

6. For the assessment of the present claims 1-24, 26, 27 on the question whether they are industrially applicable, no unified criteria exist in the PCT Contracting States. The patentability can also be dependent upon the formulation of the claims. The EPO, for example, does not recognize as industrially applicable the subject-matter of claims to the use of a compound in medical treatment, but may allow, however, claims to a known compound for first use in medical treatment and the use of such a compound for the manufacture of a medicament for a new medical treatment.